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# Investigations of the growth of the vapor-air shell of a gas discharge with a liquid electrolytic cathode of sodium hydroxide solution

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## Abstract

© Published under licence by IOP Publishing Ltd. Gas discharges with liquid electrodes are widely used in cleaning, polishing, hardening, forming a surface microrelief with specified parameters. Burning gas discharge in a number of cases occurs in the vapor-air shell, with film boiling of the electrolyte. The properties of the vapor-air shell strongly influence on the physical processes of the discharge. Investigation of the growth mechanism of the vapor-air shell and the determination of the main factors of influence are relevant for the optimization of applied processes. The structure of the discharge in the vapor-air shell is determined, and the presence of the discharge leader structure is established. Anomalous growth of the vapor-air shell of a gas discharge with a liquid electrolytic cathode was detected.

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